



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/790,638

03/01/2004

James H. Werner

S-100,565

9767

35068 7590 11/06/2007  
LOS ALAMOS NATIONAL SECURITY, LLC  
LOS ALAMOS NATIONAL LABORATORY  
PPO. BOX 1663, LC/IP, MS A187  
LOS ALAMOS, NM 87545

EXAMINER

GEISEL, KARA E

ART UNIT

PAPER NUMBER

2877

MAIL DATE

DELIVERY MODE

11/06/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/790,638

Applicant(s)

WERNER ET AL.

Examiner

Kara E. Geisel

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 August 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments, see the amendment, filed August 28<sup>th</sup>, 2007, with respect to the rejection under 35 U.S.C. 112 has been fully considered and are persuasive. This rejection of claims 1-7 has been withdrawn.

The declaration under 37 CFR 1.132 filed August 28<sup>th</sup>, 2007 is sufficient to overcome the rejection of claims 1-7 based upon Swanson et al. (US Pubs 2004/0171175).

However, upon further consideration, a new rejection has been set forth below.

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weiss et al. (US Pubs 2002/0064789), newly cited in view of Swanson et al. (USPN 6,627,396), newly cited, or in view of Swanson et al. (USPN 6,893,814), previously cited.

As a note: Swanson '814 is a divisional of Swanson '396, and therefore, an identical rejection can be, and is being made for both patents.

In regards to claim 1, Weiss discloses an apparatus (fig. 1) comprising a transparent substrate (below S) for support of a sample under investigation (S), a light source for providing an excitation light beam to excite the sample (laser), a first filter means for reflecting the excitation light beam from the light source to an objective and for filtering light received from the sample (DC1), an objective for collecting the reflected excitation beam from the first filter means and sending it through the transparent substrate to the sample (OL), a support having a pinhole therethrough for directing light filtered by the first filter means to a second filter means (PH), a second filter means for reflecting a portion of the light received from the pinhole to a first detector means, and for filtering the remainder of the light received through the pinhole (DC2), a first detector means for detecting light reflected from the second filter means (APD2) and a second detector means for detecting light filtered by the second filter means (APD1). Weiss is silent to the sample comprising membrane vesicles including a trifunctional linker molecule including a fluorophore. However, the invention is directed to a confocal microscope which would be suitable for detecting a sample with a fluorophore that can fluoresce in two specific wavelengths (§ 98).

Swanson discloses sample comprising membrane vesicles including a trifunctional linker molecule including a fluorophore (column 3, lines 15-25). The fluorophore attached can fluoresce at two specific wavelengths, depending on attachment of a virus, therefore leading to an ultra-sensitive detection of the influenza virus (column 7, lines 5-31). Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to use the apparatus of Weiss for detecting a sample with a fluorophore that can fluoresce in two specific wavelengths to measure the sample of Swanson comprising membrane vesicles including trifunctional linker molecule including a fluorophore in order to detect the two wavelengths of the fluorophores in order to have an ultra-sensitive detection of the influenza virus.

In regards to claim 2, the objective is a converging lens (OL and § 102).

In regards to claim 3, the first and second filter means are dichroic mirrors (DC1 and DC2 and ¶ 102).

In regards to claim 4, said first filter means is a longpass optical filter reflecting excitation wavelengths and passing fluorescence emission wavelengths (DC1) and said second filter means spectrally resolves said fluorescence emission wavelengths (DC2 and ¶ 102).

In regards to claim 5, the first dichroic mirror would be selected to reflect the wavelength at which the sample could be excited, and transmit the emission wavelengths from the sample, and the second dichroic mirror would be selected to reflect one set of emission wavelengths and pass another set of emission wavelengths from the sample. Therefore, it would have been obvious to one of ordinary skill at the time the invention was made to have first dichroic mirror reflects wavelengths below 500 nm and passes wavelengths above 500 nm and said second dichroic mirror reflects wavelengths below 550 nm and passes wavelengths above 550 nm if these were the parameters of the excitation and emission wavelengths of the sample.

In regards to claim 6, the transparent substrate can be made of glass (microscope slides are traditionally made from glass).

In regards to claim 7, the apparatus is characterized as having a single detection channel (the channel being from the sample, S, to the detectors, APD1-2).

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kara E Geisel whose telephone number is **571 272 2416**. The examiner can normally be reached on Monday through Friday, 8am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on **571 272 2800 ext. 77**. The fax phone number for the organization where this application or proceeding is assigned is **571 273 8300**.

Application/Control Number:  
10/790,638  
Art Unit: 2877

Page 5

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
**Kara E. Geisel**  
**Art Unit 2877**

November 1, 2007